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THE
MORRIS ARBORETUM
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Pinus Bungeana Zucc.
Lace-bark Pine

ARBORETUM BULLETIN, JULY, 1938

The Lace-bark Pine, *Pinus Bungeana* Zucc., is a tree of Northwestern China, introduced into America in 1846 (Rehder). It is a slow-growing tree, branching at the base, with sparse, light-green foliage, and sheds its outer bark in patches, much like the sycamore, thus giving to the stem and larger branches a strikingly mottled appearance. This appearance doubtless accounts for the name of the tree.

In spite of its shrub-like habit, the tree reaches a height of 75 feet or more. The stiff, light-green leaves in groups of three are from $2\frac{1}{2}$ to 5 inches long. The cones, almost without stalk, are from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches long, with the scales that make it up tipped by a spine with a broad base.

This hardy species, by its thin foliage, branching habit and spotted bark, contributes a very characteristic element to a planting.

The tree photographed for this illustration stands near the Rose Garden in the Arboretum.

The cover drawing represents the log cabin by the Chestnut Hill brook.

The photograph and the drawing were made by Gustave Liebscher.

RODNEY H. TRUE

FLOWER BEDS AND BORDERS*

—BY—

R. S. STURTEVANT, M. L. A.

FLOWER BEDS AND BORDERS which with their boundary paths or panels of green-sward form the pattern of any garden occupy in a way the left-over areas. Some we may call beds, bounded on all sides by paths; others, borders, the space between a recognizable path and the garden enclosure of wall or hedge. Each has its place in the garden design, and few gardens without a border planting where we can use color directly against a background are completely satisfactory. A bed must be seen to a greater or lesser extent from all sides, whereas, the border is really seen from but one long side.

The design of the garden as a whole indicates the relative importance of this bed or that, their importance diminishing quite markedly as they lie farther away from a major axis or garden feature. Hence, it follows that the enclosing borders, if to be seen across a pattern of plants and paths, are relatively unimportant in their arrangement of detailed planting. In fact, many a garden gains interest by carefully balanced and selected plantings in the central beds and a riot of variety in the borders. Only when a garden is a mere panel of grass enclosed by flowers do the borders require touches of formality in their planning. Then, too, the end border opposite our usual entrance counts enormously and deserves special consideration to secure the greatest possible interest of color, form and texture in each season.

The very fact that locations about a terrace or central pool, or to either side of a main axis, are both the first and the most seen, we must not only select plants of continuing interest, but place them meticulously. We need succession of interest in color or foliage, and we cannot afford breaks due to the dying down of a plant like the Oriental poppy, or eyesores so conspicuous as the heavy foliage of yellowing Trumpet daffodils. Just as the Flowering Dogwood among trees rates high for its habit of branching and charm of winter bud, its spring white and summer green and autumn crimson, so some flowers, or, under cultivation, some combinations of flowers, rate highly.

And without speaking of color schemes or patterns, let us consider growth habits, both above and below ground, and their effect on a close planting. And it should never be forgotten that we must have close planting to secure any appreciable

*Abstract of lecture given at the Morris Arboretum on April 9, 1938.

succession of bloom. The English axiom—a plant to every six-inch square—suggests the ideal, but in an established border many a spadeful of some plants will provide us with a dozen or more divisions for a new planting.

Nature provides our pattern. Perhaps a widespread oak shelters a scattering of Judas tree and Dogwood. Below this canopy a carpet of brakes or low bush blueberries may vie for light. In the fall there may be scattered clumps of woodland asters or goldenrod, in spring colonies of violets. Above ground we have superimposed layers of foliage and below ground, if we but knew it, we have shallow and deep-rooting layers. We have plants that are in active growth at different seasons. We can remove and restrain the less effective natives, insert shade-loving lilies, scatter shallow-rooting scillas to join the violets, tend sheets of equally shallow-rooting *Phlox divaricata*, and drift in sweeps of the *Incomparabilis* daffodils, which better endure the well-drained soil that our sheltering oak has indicated as the natural soil. Naturally, in a well-prepared garden bed in a sunny spot our problem is different, but we must study the root habits of its occupants, as well as their colors and heights. If we crowd plants of the same kind or habit, we must make up for it by extra feeding, extra care in pruning and thinning, BUT if we crowd plants (as in nature) of varying habit, we may approach our much-sought ideal of succession of interest with relatively little maintenance.

A dense, compact root system of any depth prevents interplanting. *Hemerocallis*, *Hosta*, Beardless Irises, *Phlox*, the bigger *Veronicas*, and, to a fair extent, *Peonies* and *Fraxinella*, *Bocconia* and *Silphium*, to mention but a few, should be used singly or in a single line where their foliage will add to the composition when the flowers have gone by. Only the most enduring of groundcovers will creep close to their dense crown, and only an occasional Tiger Lily, or something of the sort, will find its way through their wall of root and foliage. So many of the Daisy family are both shallow-rooting and husky that we may let them run as chickens do in the country hog pen if they enhance our effect. Other *compositae*, however, like chrysanthemums and some hybrid asters, need annual replanting, and their shallow rooting may suggest their use over deep-rooting bulbs, for there are shallow-rooting bulbs like *Scilla sibirica*, *Eranthis*, or *Corydalis*; deeper-rooting bulbs like tulips and hyacinths; and still deeper-rooting narcissus and lilies or trilliums and erythroniums, which are so difficult to collect from the wild.

With well-prepared beds and borders, what we then need is intelligent planting and supervision, but not the time-honoured cultivation of custom. If you are growing vegetables or exhibition flowers, plant them in rows and cultivate for perfection, but for effect let your plants grow together. Restrain this or that as needed, but as

spring passes into summer let no bare ground show in your borders. Out-of-place weeds or *Boltonia* can be yanked out by the roots, dead flowers removed and broken stalks restaked (if the stakes are inconspicuous. I sometimes wonder whether it is the lilies or the stakes that I am expected to admire). Even in earliest spring don't hoe all the baby seedlings or rake out all the trailing sedums and pinks. Think of the proud purchaser of the new Korean chrysanthemums who saw the bloom, but whose gardener hoed so close to the blooming stalk that there was no natural increase.

Space does not permit much mention of design, the value of properly placed accents of evergreen or foliage, the charm of dot plants to break the flatness of small beds where early bulbs in mass give way to annuals, the way that a straight line of phlox may echo the line of the bed itself, or a curving line of irises distract therefrom and lead the eye insensibly up the height of a standard lilac. There is little chance to enumerate tricks of maintenance like breaking forward tall aster sprays to fill the oasis left by the Oriental poppy, or the planting of an erect, clumpy columbine that will permit a carpet of low phlox to remain unsmothered at its feet. Each writer, each practitioner, each gardener, has his own ways. Each can learn to advantage and no one system, either on paper or in planting, really suits all the beds and boarders in even one garden.

Generally speaking, a bed should be of workable size, not over six feet in width (it may be a foot wide ribbon as part of a paved pattern). Speaking generally again, this width rarely permits the use of many plants much higher than a phlox or peony, and a wider bed which permits greater heights in its occupants really becomes two borders backed against each other—a not undesirable solution in many a garden. On the other hand, a border with its proper background, can hardly be less than six feet in width with any satisfaction in its planting, although its width should, in section, be related to the height of hedge or wall behind. A low hedge permits a view over, and a four- to five-foot border carries needed height. A six-foot wall sets off all but the tallest of flowers and a still higher one, as in so many of the English borders, permits the use of small trees and shrubs to great advantage. Incidentally, a flower border should make use of any plant material that adds to its effect, and not be limited to the use of herbaceous material only. There are too many garden sites that need the winter interest of accents or edgings of twig or berry or evergreen.

And in this most fascinating of pursuits, the growing of flowers in beds or borders, remember, that despite all your care and expense in preparation, every garden has a different place in the design. It has different exposure, soil, drainage, climate,—one knows not what,—but each of us cannot blindly copy someone else's treasured effect with success, but may well come upon one of our own.

THE HORTICULTURAL VALUE OF NATIVE VIBURNUMS

To ANYONE with an eye open to the good qualities of our native shrubbery, it most often seem that much beauty is being overlooked. Among these unappreciated plants I would include several species of our own native Viburnums. Anyone who has seen fall come in New England has had pleasure in the changes of color in fruit and in foliage, and has enjoyed flowers in spring or summer as well. The species mentioned below seem to me to be worthy of attention by plant lovers in this part of the country.

Viburnum alnifolium Marsh.

This shrub goes under a variety of common names—American wayfaring tree, the Hobble bush, Witch hobble, and Moosewood being among the number. It will be found from the northeastern states to the higher parts of Pennsylvania, where it occurs in open places in the woods and along the moist roadsides. It has a somewhat spreading, reclining habit, and sometimes roots when the branches touch the soil. Along roadsides it shows its large, rounded leaves, with sharp tips and heart-shaped bases, and with finely toothed margins. The veins on the back are somewhat scurfy.

The compact, five-rayed flower cluster appears in May and June, with two types of white flowers, some of those at the edge of the cyme being much larger than the others. In the fall, the flower cluster is succeeded by flat-topped clusters of coral-red berries that lend brilliant colors to the landscape before they reach the purple-black color of maturity. The foliage alone is a very beautiful addition to the fall landscape. Long before frost, the large, heart-shaped leaves begin to take on a deep wine color that gradually fills the whole top, making its special contribution to the autumn pattern of beauty.

The northern distribution of this species would seem to insure it against winter injury. It is interesting to note that the winter buds are not covered by the usual type of bud scales, but rather by small, rusty outer leaves.

Viburnum cassinoides.

This is another species of great beauty, known under the common names of Withe Rod, Appalachian Tea and Wild Raisin. It also is a type abundant in the northeastern states and along the mountains to the southward as far as North Carolina. It occurs in acid sphagnum swamps and in sandy roadsides and open places. The leaves in general look like those of the Mountain Laurel.

The erect shrub or small tree reaches a height of from 4 to 10 feet, the bark of the young wood being somewhat scurfy. The thick, dull-green deciduous leaves are

from 1 to 3 inches in length. Aside from the foliage, the flat-topped clusters of white flowers are of interest in the summer. The clusters of berries, ripening in the early fall, give this plant an almost unique beauty. Along the moister forest roadsides of New England, the clusters of berries show transitions of color from green to ivory-white, flushing with pink that later intensifies to red on its way to the purples and blues of the ripe fruits. The wide adaptation of this shrub to varieties of soil and moisture conditions, with its ability to withstand stern weather, should give it a place in our shrub plantings.

Viburnum trilobum Marsh.

The taller high-bush Cranberry of wider distribution in the northern states is another hardy plant, already somewhat used in the form of the conspicuous type with showy white marginal flowers that recall the fuller European type known as the Snow-ball tree. The three-lobed, bright-green leaves, the broad-spreading, flat-topped cymes of white flowers, followed by the bright-red acid berries having the flavor of cranberries, make the tall shrub attractive until the late autumn and winter. The fruits are edible. This plant occurs at the edge of the woods, along roadsides, and near streams, where it adds a characteristic lightness to the landscape.

Among the taller members of the Viburnum or Arrow-wood group are two that look much alike to the hasty glance: *Viburnum lentago*, going by several common names—Sheep berry, Wild Raisin Nanny berry, and Sweet Viburnum—among others, and *Viburnum prunifolium*, the Black Haw. They occur naturally as tall shrubs or small trees from New England southward. They may be seen at the edge of woods, along fence rows, and in moist, well-lighted places.

The leaves vary somewhat in shape and in serration. The flat white flower clusters, reaching a size of from 4 to 5 inches across, are seen in late spring and early autumn. They are succeeded by bluish-black fruit clusters that remain until spring unless eaten by birds or animals. The haws have a rather sweetish, raisin-like taste. These species are hardy in this climate.

Viburnum acerifolium. L.

Dockmackie or Maple-leaved Viburnum is a more delicate, slender, upright shrub of the northern range, where it is characteristically found in the not too dense shade of moist woods. It reaches a height of from 4 to 5 feet, and bears foliage resembling the maples, coarsely dentate, three-lobed, from 3 to 5 inches long. The foliage in fall takes on a dark purple color, and the berries are almost black. It is hardy, and in its tolerance of shade contributes a useful quality to shrubbery plantings.

Viburnum scabrellum. Chapm.

This is a species of somewhat more southerly distribution, and is seen abundantly on the highlands along the Delaware River and farther south to Texas and

Florida. The reddish-brown shrub, with a star-shaped pubescence, bears leaves of a rounded outline, having a heart-shaped base, with a coarse-toothed margin.

The flower cluster, of white flowers, is followed by fruits that run through a series of blue colors as they ripen that is rather characteristic.

The shrub reaches a height of from 5 to 6 feet. It grows near open, fairly moist roadsides, where it often forms rather attractive thickets with the hazel bushes, wild grapes and bittersweet.

RODNEY H. TRUE



THE MICHAUX MEMORIAL GROVE

IT MAY NOT be known to many that a memorial grove of oaks was planted in the Fairmount Park at Philadelphia at the time of the opening of the Centennial Exposition in 1876 to commemorate the achievement of a noted French botanist, who, with his even more illustrious father, contributed greatly to the knowledge of the plant life of young America.

On October 1, 1785, André Michaux and his fifteen-year-old son, François André, landed in New York, and immediately set about establishing a nursery in which trees were to be grown for transfer to France, for the purpose of enriching the timber resources of that country. Years passed and rich collections of plants were sent to France, including over 60,000 young trees. These trees were largely dispersed among court favorites, and failed to accomplish the desired results.

The French Revolution came and went. The father, André Michaux, then headed a new undertaking, this time in Madagascar, where he died. His son, François André Michaux, was sent back to America, under the new government, again to explore the resources of the New World and to secure trees for France. This time he had better success. About 250,000 trees were developed from seed that he sent home, and many young trees were successfully transplanted. He secured the publication of his father's great works on American oaks and on the flora of North America, and later added his own account of the forest trees of North America in three volumes. He returned to France while still young enough to see his venture through to a successful issue. He continued his American friendships and contacts with men of science, and was elected a member of the American Philosophical Society and an honorary member of the Philadelphia Society for Promoting Agriculture. On October 23, 1855, "after a busy day among his American trees," he was carried off by a stroke of apoplexy. He left a will with Isaac Lea, of the American Philosophical Society, by which he gave a fund to the Society, to be spent in forwarding work in that organization along the lines of forestry, agriculture and botany. One of the first expenditures from that fund was devoted to establishing a

nursery of many species of oak. These oaks were transferred from the nursery in 1876 to a situation near Horticultural Hall, when Fairmount Park was in the earliest stages of its formation, and should perhaps be regarded as the beginning of that now famous tree collection that in time grew up around the Centennial Buildings.

Through the kindness of Mr. S. N. Baxter, the present Arboriculturist of Fairmount Park, the supposed site of the Michaux Memorial Grove of oaks was located from old maps. A survey showed that the oaks are still there, the group being traversed by Michaux Avenue. To establish still more definitely the identity of this grove, trees were selected by Mr. Baxter as a sample of the supposed memorial group, and through the kindness of Mr. R. D. Forbes, of the Allegheny Forest Experiment Station, and his associates, tests were made with an increment borer to ascertain the number of rings, therefore the ages of the trees in question. Out of the seven tested, six showed an age of sixty years. From the uniformity of age, it seems clear that the Michaux Grove is still made up in large part of the trees planted at the inauguration of the Centennial in 1876. Few replacements seem to have taken place. The trees in general are in good condition and, as things go with oaks hereabouts, are in their vigorous youth. Large oaks dying in the Morris Arboretum have shown from 263 to over 350 rings. If this be the natural life expectation of oaks in this vicinity, many generations of men still to be born will see Michaux's Memorial Grove. Will they know what they are seeing? Perhaps a permanent marker might be in order.

RODNEY H. TRUE



THE EARLY DAYS OF THE SECKEL PEAR

MANY OF US have known the small, rich pear that ripens in the fall with a flavor of its own, known as the Seckel Pear, but have not known that it is of American, indeed of Philadelphian, origin. In searching for the early story of this superior fruit, in answer to a recent request for information on the subject, the writer found an account that should interest Philadelphians. This account was written by that early distinguished horticultural writer and landscape designer, Andrew Jackson Downing, the story of whose life and that of his heroic end lend an added interest to his many writings.

In his book on "FRUITS AND FRUIT TREES OF AMERICA," published in 1852, Downing tells the story of the early days of the Seckel pear. I quote the account given on page 415 of the work cited:

"The Seckel Pear originated on the farm of Mr. Seckel, about four miles from Philadelphia. It was sent to Europe by the late Dr. Hosack, in 1819, and the fruit was pronounced by the London Horticultural Society as exceeding in flavor the richest of their autumn pears."

In the following footnote, the story is amplified:

"The precise origin of the Seckel Pear is unknown. The first pomologists of Europe have pronounced that it is entirely distinct from any European variety, and its affinity to the Rousselet, a well-known German pear, leads to the supposition that the seeds of the latter pear, having been brought here by some of the Germans settling near Philadelphia, by chance produced this superior seedling. However that may be, the following *morceau* of its history may be relied on as authentic, it being related by the late venerable Bishop White, whose tenacity of memory is well known.

"About eighty years ago (1772 ca), when the Bishop was a lad, there was a well-known sportsman and cattle dealer in Philadelphia, who was familiarly known as 'Dutch Jacob.' Every year, early in the autumn, on returning from his shooting excursions, Dutch Jacob regaled his neighbors with pears of an unusually delicious flavor, the secret of whose place of growth, however, he would never satisfy their curiosity by divulging. At length, the Holland Land Company, owning a considerable tract south of the City, disposed of it in parcels, and Dutch Jacob then secured the ground on which his favorite pear tree stood, a fine strip of land near the Delaware. Not long afterward, it became the farm of a Mr. Seckel, who introduced this remarkable fruit to public notice, and it received his name. Afterward, the property was added to the vast estate of the late Stephen Girard. The original tree still exists (or did a few years ago), vigorous and fruitful. Specimens of its pears were, quite lately, exhibited at the annual shows of the Pennsylvania Horticultural Society."

Pictures of the tree in its old age appear in Bailey's Standard Cyclopedia of Horticulture, Vol. III, p. 2513. In 1880, it is shown as a rather decrepit, but still living tree. In 1908, it was represented as a stump, apparently lifeless.

RODNEY H. TRUE

EXHIBIT AT THE PHILADELPHIA FLOWER SHOW
AND AT THE
ANNUAL MEETING of the GARDEN CLUB OF AMERICA

AT THE INVITATION of the Pennsylvania Horticultural Society, the Arboretum made an exhibit at the Annual Philadelphia Flower Show of a collection of non-hardy, cone-bearing evergreens, mainly from greenhouse material at the Arboretum, presented some years ago by Colonel Robert H. Montgomery. The plants were arranged by James Lambert and John Tonkin, of the Arboretum staff. The graceful

forms of the small trees, with the variety of colors, gave an unusual note to this exhibit that called forth much favorable comment.

This commendation perhaps led the Horticultural Committee of The Garden Club of America to ask that this collection be again shown at its exhibit held on May 11, 1938, at the Franklin Institute.

The Director gave a brief talk on the exhibit and on the work of the Morris Arboretum.

A list of the species and varieties exhibited follows:

TENDER CONIFERS

- Araucaria Bidwellii*
- Araucaria araucana*—Monkey Puzzle Tree
- Araucaria excelsa*—Norfolk Island Pine
- Cryptomeria japonica*, *vilmoriana*
- Cryptomeria japonica*, *araucariooides*
- Cryptomeria japonica*, *nana*
- Cryptomeria japonica*, *Bendai Sugi*
- Cryptomeria elegans*
- Cupressus sempervirens*
- Cupressus sempervirens stricta*—Italian Cypress
- Cupressus lusitanica*
- Cupressus Cashmeriana*—Cashmerian Cypress
- Cupressus tortulosa majestica*
- Cupressus arizonica*
- Cupressus arizonica Benita*
- Podocarpus latifolia*
- Podocarpus latifolia* “male plant”
- Podocarpus macrophylla*
- Podocarpus macrophylla maki* (variegated form)
- Podocarpus gracilior*
- Podocarpus acutifolia*
- Podocarpus ferruginea*
- Podocarpus dacrydoides*
- Podocarpus totaro Hallii*
- Chamaecyparis Lawsoniana Pottensii*
- Weddingtonia Schwartzii*
- Libocedrus macrolepis*
- Libocedrus cupressoides*
- Libocedrus decurrens*
- Libocedrus decurrens aurea*
- Libocedrus plumosa*
- Taiwania cryptomerioidea*
- Cephalotaxus Fortunei*—semi-hardy
- Cunninghamia lanceolata*—semi-hardy
- Sagegothea conspicua*
- Sequoia sempervirens*—California Redwood

HARDY CONIFERS

Hardy Conifers included in this group for foreground and background effect were:

Foreground

Juniperus horizontalis
Juniperus sabina tamariscifolia
Juniperus chinensis
Juniperus chinensis argentifolia
Picea conica
Thuja occidentalis Ohlendorfii

Background

Tsuga caroliniana—Carolina Hemlock
Tsuga canadensis Fremdi
Tsuga canadensis macrophylla
Cryptomeria japonica Lobbii—Japanese Temple Tree
Chamaecyparis Lawsoniana—Lawson's Cypress



GARDEN NEWS

The May Day Play by the women students of the University, with the Crowning of the Queen, was held on Saturday, May 14th, at the Arboretum. Rain drove the players and a large audience into the Mansion, where a somewhat modified program was successfully carried out.

The annual meeting of the Women's Alumnae Society of the University of Pennsylvania was held on the open porch of the Mansion on Saturday, May 14th. The annual business meeting followed a box luncheon held in the Mansion because of the rain.

On Saturday, April 23rd, fifty members of the American Philosophical Society, then in session in the City, visited the Arboretum and enjoyed a tour of the grounds.

An educational organization, Pi Lambda Theta, connected with the School of Education of the University of Pennsylvania, visited the Arboretum on Thursday, June 9th, and enjoyed a picnic supper at the Farm.

Classes from the Oak Lane Country Day School, connected with Temple University, have paid the Arboretum two visits.

A group of students from the Lawrenceville School at Lawrenceville, New Jersey, led by Dr. A. R. Evans, spent a part of May 25th at the Arboretum.

The usual visit to the Arboretum by students in the Summer School at the University was scheduled for July 5th.

